

**Notice of Allowability**

Application No.

10/736,040

Examiner

Lee, Calvin

Applicant(s)

BLANCHARD, RICHARD A.

Art Unit

2825



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-52.
3. ☒ The drawings filed on 15 December 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                                  |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>enclosed</u> . |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>12/15/03</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment  |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                               | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                         |
|  | 9. <input type="checkbox"/> Other ____.  |

**OFFICE ACTION**

***Examiner's Amendment***

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312

IN THE CLAIMS: Claims 1, 14, 27, and 40, line 2, before "damage layer" with --a--

Claims 1, 14, 27, and 40, line 5, replace "masked, etch" with --mask for etching--

Claim 1 line 14, claim 14 line 17, claim 27 line 14, and claim 40 line 17, replace "an layer of silicon dioxide" with --a layer of silicon dioxide --

2. Authorization for this examiner's amendment was given in a telephone interview with Richard K. Robinson on May 24, 2004.

***Allowable Subject Matter***

3. Claims 1-52 are allowed. Following is the reason for allowance:

The closest prior art, US 6,277,703 to *Barlocchi et al*, teaches using an oxide layer **22** as a mask for etching an epitaxial layer **16** to create a plurality of pillars **20a**, **20b** [Fig. 7 and 13], the plurality of pillars being enclosed in a first area of the top surface of the epitaxial layer, the first area having a predefine perimeter, the plurality of pillars being separated from each other by inner trenches **23** and from the perimeter by a perimeter trench **23**. However, *Barlocchi et al* discloses, *inter alia*, none of the following features such as: the epitaxial layer having a damage layer, the inner trenches and the perimeter trench extending from the first surface to beyond the predetermined depth of damaged layer, and a layer of silicon dioxide replacing the damage layer.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication from the Examiner should be directed to *Calvin Lee* at (571) 272-1896, Monday to Thursday, from 7 to 5 (ET). If attempts to reach the examiner by telephone are unsuccessful, Art Unit 2825's Supervisory Patent Examiner *Matthew Smith* whose telephone number is (571) 272-1907.

Any inquiry relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0596. The fax phones are (703) 872-9318 for regular communications and (703) 872-9319 for After-Final communications.



May 26, 2004



MATTHEW SMITH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

|                          |                        |                       |  |
|--------------------------|------------------------|-----------------------|--|
| <b>Interview Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b>   |  |
|                          | 10/736,040             | BLANCHARD, RICHARD A. |  |
|                          | <b>Examiner</b>        | <b>Art Unit</b>       |  |
|                          | Lee, Calvin            | 2825                  |  |

All participants (applicant, applicant's representative, PTO personnel):

(1) Lee Calvin. (3)\_\_\_\_\_.

(2) Richard K. Robinson. (4)\_\_\_\_\_.

Date of Interview: 24 May 2004.

Type: a)☒ Telephonic b)☐ Video Conference  
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☐ No.  
If Yes, brief description: \_\_\_\_\_.

Claim(s) discussed: 1, 14, 27 and 40.

Identification of prior art discussed: \_\_\_\_\_.

Agreement with respect to the claims f)☐ was reached. g)☐ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Claims 1, 14, 27, and 40, line 2, before "damage layer" with --a--  
Claims 1, 14, 27, and 40, line 5, replace "masked, etch" with --mask for etching--  
Claim 1 line 14, claim 14 line 17, claim 27 line 14, and claim 40 line 17, replace "an layer of silicon dioxide" with --a  
layer of silicon dioxide --.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

\_\_\_\_\_  
Examiner's signature, if required